



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,645	06/01/2001	Jeyhan Karaoguz	17400US02	1717
23446	7590	08/16/2006	EXAMINER	
MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			KIM, KEVIN	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 08/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/872,645

Applicant(s)

KARAOGUZ, JEYHAN

Examiner

Kevin Y. Kim

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,13,22,28-30,34,40-42,45,52 and 58-96 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 4,13,22,34,45,52 and 58-92 is/are allowed.  
6) ☒ Claim(s) 28-30,40-42,93,95 and 96 is/are rejected.  
7) ☒ Claim(s) 94 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed June 8, 2006 have been fully considered but they are not persuasive.

Applicant amended claim 8 in such a way that state bits are not “stored.” Based on this amendment applicant argues that the prior art reference, Shin, does not show such inputting of stored state bits. Fig. 6 of the reference shows an encoder comprised registers (depicted as boxes) whose inputs and/or outputs are added. Since these registers are storage elements, data bits in the encoder are clearly “stored state bits.”

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 28, 40, 93,95 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (previously cited) in view of Mogre et al (US 6,987,543 previously cited).

#### **Claims 28 and 40.**

Shin discloses (see Fig.6) a transmitter, comprising;  
an encoder (17) comprising,

“a state machine” (21) for generating a plurality of stored state bits (stored in the registers), and

“an interface” (43) to couple an input (41) of at least to one of the stored state bits into the state machine during a time period.

Though not described, “a transmit control unit” is required to operate the interface, i.e., switches (43,45), to switch between line 27 and line 41. Shin is silent on whether the encoder (17) is used in an RF communication and more specifically as an integral part coupled to an RF stage, also an integral part of a transmitter.

Mogre et al teaches the use of an encoder such as disclosed by Shin in an RF transmitter. See Fig.1 which shows a turbo encoder (110) coupled to a modulator (114, i.e., an RF stage) of a transmitter (100). Thus, it would have been obvious to one skilled in the art to arrange the encoder of Shin coupled to the RF stage of an RF transmitter, wherein the encoder and the RF stage are each an integral part of the transmitter, as taught by Mogre et al, for the purpose of improving the bit error rate performance in an RF communication.

**Claim 93.**

Shin discloses (see Fig.6) an encoder (17); comprising,

“a state machine” (21) for generating a plurality of state bits having a most significant bit, and

“an interface” (43) to couple an input (41) representative of the most significant bit into the state machine during a time period.

**Claim 94.**

**Claim 95**

Shin discloses (see Fig.6) an encoder (17); comprising,

“a state machine” (21,23) for generating a plurality of state bits having a most significant bit, and

“an interface” (43,45) configured to couple a plurality of inputs corresponding to the first plurality of state bits into the state machine during a time period.

**Claim 96.**

One of the state bits in the state machine is a most significant bit of a binary representation of states.

***Claim Rejections - 35 USC § 103***

4. Claims 29, 30, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Mogre et al, as applied to claim 28 above in view of an admitted prior art.

Shin in view of Mogre et al disclose all the subject matter claimed except for a preamble generator and a CRC generator. However, as admitted by applicant at page 2 of the present application. A preamble generator and a CRC generator are elements of a typical trellis encoder such as disclosed by Shin. Thus, it would have been obvious to one skilled in the art at the time the invention was made to add a preamble generator and a CRC generator to the encoder of Shin to generate a standard data frame.

***Allowable Subject Matter***

4. Claims 4,13, 22, 34, 45, 52, 58-92 are allowed.

3. Claim 94 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2611

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 14, 2006

AU 2611



**KEVIN KIM  
PATENT EXAMINER**